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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/657,486	09/08/2003	Carl L. Sisemore	84628	2685

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NAVAL SURFACE WARFARE CENTER, DAHLGREN DIVISION
OFFICE OF COUNSEL, CODE XDC1
17320 DAHLGREN ROAD
DAHLGREN, VA 22448-5110

EXAMINER

THORNEWELL, KIMBERLY A

ART UNIT	PAPER NUMBER
2128	

DATE MAILED: 11/30/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/657,486	SISEMORE, CARL L. .	
	Examiner	Art Unit	
	Kimberly Thornevell	2128	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 20 September 2006.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1 and 2 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-2 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. Claims 1 and 2 were originally presented for examination. In the Office Action dated 6/20/2006, claims 1 and 2 were rejected. In the reply dated 9/20/2006, the Applicant amended claims 1 and 2 and therefore both claims remain pending in the instant application.

Response to Arguments

2. Applicant's arguments filed 9/20/2006 have been fully considered but they are not persuasive. See detailed explanation before.

Response: Section 112, Second Paragraph Rejection

Although the Examiner thanks the Applicant for amending most of the indefinite terms throughout claim 1 in order to overcome the rejection, the terms "added lumped masses" in the last line of claim 1 and "and/or" in line 4 of claim 2 remain indefinite. Consequently, the rejection of both claims under 35 USC 112, second paragraph, is maintained.

Response: Section 102 Rejection

Regarding claim 1,

The Applicant argued that the ShipCAM reference does not teach modeling a ship as gross hull and beam portions and integrating into a portion of the beam portion a detailed section.

The Examiner respectfully traverses with the following:

In response to applicant's argument that the references fail to show certain features of applicant's invention, it is noted that the features upon which applicant relies (i.e., *gross* hull and beam portions in the ship model) are not recited in the rejected claim(s). Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993).

In the "constructing a beam model" step of the method, it is claimed that the beam model is constructed within the dry region of the hull model. ShipCAM teaches the construction of the beam model as, for example, the stiffeners on page 60 (see figure). The fact that this model is constructed within the dry region of the hull model is taught on page 133, under the heading "Stringer Angle." Again, there is no requirement within the claim for a ship model of gross hull and beam portions. Even if this limitation were within the claim, the Examiner directs the Applicant's attention to the figure on the bottom right of page 72. As described in the paragraph above the figure, a ShipConstructor model is shown of a police boat, combining the surface structure from the hull model and the internal structure. The rightmost portion of the ship model has been cut away to reveal the hull model (depicted at the rear of the ship model) and some of the beams from the beam model towards the front of the ship). Hence, the ship modeled in ShipCAM is modeled is gross hull and beam portions.

The last step of the method refers to "replacing the part of the beam model with the detailed model." Again, the Examiner directs the Applicant's attention to the figure on the bottom right of page 72. As described above, the rightmost portion of the ship model has been cut away to reveal the hull and beam models. However, in the left portion of the model, a "detailed" figure is shown which covers up, or "replaces" that part of the beam model.

Regarding claim 2,

The Applicant argued that the ShipCAM reference does not teach adding lumped masses and varying cross-section and/or material properties until the natural frequencies of the model and ship substantially agree.

The Examiner respectfully traverses with the following:

The adding of lumped masses is taught beginning on page 55 under the section “Weights & CG.” This section teaches the user how to calculate the weights along each individual plate, and also for all plates combined. In particular, steps 6-8 on pages 56 and 57 teach setting the parameters for the blocks/plates, including how much extra material to add (step 6). In steps 9-11 on page 57, the weights based on the parameters inputted by the user are calculated. Hence the adding of lumped masses is taught by the ShipCAM reference because one can add extra material to partitions of the ship model, hence adding masses.

The varying of cross-sectional properties until the natural frequencies of the model and ship agree is taught on page 21, in the figure at the top of the page and by step 7. Step 7 teaches recalculating the spline in the cross section until the waterline is faired. The figure at the top of the page shows the frequencies of the ship. Steps 8, 9, and the Note below step 9 teach repeating the step of varying the cross-sectional property until the waterline and surface are smooth (i.e., the natural frequencies are in agreement. The varying of material properties is taught on page 56, particularly in step 6 and the figure directly below, where the type and amount of material to be added are inputted.

Because all of the limitations of claims 1 and 2 are taught by the ShipCAM reference, the rejection of the claims under Section 102 is maintained.

Claim Objections

3. Claim 1 is objected to because the Applicant's amendment in line 1 of the claim should read "A method for structural modeling *of* a ship."
4. The Applicant's amendment of the third limitation of claim 1, lines 1 and 2, should read "through a series *of* substantially rigid rib connections."

Claim Rejections - 35 USC § 112

5. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.
6. Claims 1 and 2 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 1 recites the limitation "added lumped masses" in the last line. There is insufficient antecedent basis for this limitation in the claim.

Claim 2 uses the language "and/or" in line 4 to describe properties of the ship that are varied until the natural frequencies of the ship and model are in agreement. It is unclear whether one of or both of the properties would need to be varied.

Claim Rejections - 35 USC § 102

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7. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

8. Claims 1 and 2 rejected under 35 U.S.C. 102(b) as being anticipated by Albacore Research, Ltd., “ShipConstructor: ShipCAM,” 2001 ed. (“ShipCAM,” hereinafter).

As per claim 1,

ShipCAM discloses a method for structural modeling of a ship including equipment, hull, keel and integral structure, the method comprising:

- Constructing a thin shell hull model of the ship (**page 24, under “Surface Generation” first paragraph, for constructing surfaces of a hull**) having cross-sections extending along a longitudinal centerline (**page 15 under “Longitudinal Fairing”, cross-sections taught in step 4**), the cross-sections defining wet and dry regions (**page 50 step 9, inside and outside of the shell plating**), the hull model having a plurality of hull nodes (**page 25 under “Cross Spline Surface,” nodes taught as “vertices”**);
- Constructing a beam model of the ship within the dry region, the beam model having a principal beam that extends along the centerline (**page 37, under section “Cutting Sections,” planar model showing plane going through centerline of hull**), the beam model having a plurality of beam nodes (**page 58 step 9, “mark lines” on beams, or “stringers”**);

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- Connecting the principal beam to the hull model through a series of substantially rigid rib connections from the beam nodes to corresponding members of the hull nodes (**stiffeners on page 135, under section “Open Cutout References”**);
- Adjusting the beam model to characterize inertial mass (**page 57 step 11, showing adjusted weights**) and stiffness of the ship (**page 58 step 9, adjusting the stiffeners**);
- Constructing a detailed model of a cross-section portion of the ship, the portion extending longitudinally along part of the beam and hull models (**page 72 figure on bottom right of page**), the detailed model including nodes that represent equipment (**left side portion of modeled ship in figure**), the hull model and the beam model (**right side portion of modeled ship in figure**);
- Replacing the part of the beam model with the detailed model (**detailed model in left side portion of modeled ship replaces beam model in figure**); and
- Removing added lump masses along the beam at the detailed model (**page 72 first paragraph**).

As per claim 2,

ShipCAM discloses adjusting the beam model further comprising adding lumped masses along the beam in approximate proportion to a mass distribution of the ship (**page 56-57 steps 6-11**), and varying the cross-sectional (**page 21 steps 7-9**) and/or material properties of the model (**page 56 step 6**) until the ship and model natural frequencies of the ship are in substantial agreement.

Conclusion

9. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

- US Patent no. 5,627,949, issued to Letcher Jr. on 5/6/1997.
- US Patent no. 6,317,387, issued to D'Amaddio et al. on 11/13/2001.

10. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kimberly Thornewell whose telephone number is (571)272-6543. The examiner can normally be reached on 8am-4:30pm M-F.


If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Kamini Shah can be reached on (571)272-2279. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Kimberly A. Thornewell
Patent Examiner
Art Unit 2128

KAT

 HUGH JONES Ph.D.
PRIMARY PATENT EXAMINER
TECHNOLOGY CENTER 2100